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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,207	01/26/2004	Teruhisa Ninomiya	1573.1025	6425

21171 7590 05/05/2006

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EXAMINER

FIGUEROA, MARISOL

ART UNIT PAPER NUMBER

2617

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/763,207	NINOMIYA, TERUHISA	
	Examiner	Art Unit	
	Marisol Figueroa	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

Claim Objections

2. **Claim 6** is objected to because of the following informalities:
 - (a) On line 6 of claim 6, insert the word --wireless-- before terminal. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. **Claim 6** recites the limitation "said location management table" in line 8. There is insufficient antecedent basis for this limitation in the claim. Furthermore, for purposes of examination, claim 6 will be considered as depending on claim 4, because it appears that claim 6 should depend on claim 4 given that a previous mention of the "location management table" is made on claim 4.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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6. **Claim 9** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 9 is drawn to a “program product” *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent

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by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. **Claims 1, 9, and 10** are rejected under 35 U.S.C. 102(e) as being anticipated by Padovani et al. (US 2004/0196800 A1).

Regarding claim 1, Padovani discloses an apparatus for a wireless base station adapted to communicate with a plurality of wireless terminals in a plurality of sectors (see Fig. 2; p.0032, lines 1-12, the cell is divided in a plurality of sub-sectors, i.e. sectors, 0-207, 1-209, 2-211, 3-213, etc.), said apparatus comprising:

a communication control unit (see Fig. 5; p.0046, lines 1-4; p.0050-0051; beamforming control processor 508), and

a plurality of transceivers associated with said sectors (see p.0032, lines 1-7), respectively, said transceivers having respective directive antennas associated with said respective sectors (see p.0029-0030), wherein,

during a first period of time (i.e. even time slots), said communication control unit enables one or more of said plurality of transceivers that are associated with respective one or more of said plurality of sectors that are not adjacent to each other, to communicate with wireless terminals, and said communication control unit disables remaining one or more transceivers other than said enabled one or more transceivers, from communicating with wireless terminals (see p.0033, lines 7-14; during even time slots, only even sub-sectors 208 and 212 are transmitting, odd sub-sectors 210, 214 beams are set to 0, i.e. odd transceivers are disabled), and wherein, and,

during a second period of time subsequent to said first period of time, said communication control unit enables further one or more of said plurality of transceivers that are associated with respective further one or more of said plurality of sectors that are not adjacent to each other, to

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communicate with wireless terminals, said further one or more transceivers being disabled in said first period of time from communicating, and said communication control unit disables further remaining one or more transceivers other than said enabled further one or more transceivers, from communicating with wireless terminals (see p.033, lines 7-19; during odd time slots, only odd sub-sectors 210 and 214 are transmitting, even sub-sectors 208, 212 beams are set to 0, i.e. even transceiver are disabled).

Regarding claim 9, Padovani discloses a program product for an apparatus for a wireless base station adapted to communicate with a plurality of wireless terminals in a plurality of sectors (see p.0050), said program being operable to effect the steps of:

during a first period of time, enabling one or more of said plurality of transceivers that are associated with respective one or more of said plurality of sectors that are not adjacent to each other, to communicate with wireless terminals, and disabling remaining one or more transceivers other than said enabled one or more transceivers, from communicating with wireless terminals (see p.0033, lines 7-14; during even time slots, only even sub-sectors 208 and 212 are transmitting, odd sub-sectors 210, 214 beams are set to 0, i.e. odd transceivers are disabled); and,

during a second period of time subsequent to said first period of time, enabling further one or more of said plurality of transceivers that are associated with respective further one or more of said plurality of sectors that are not adjacent to each other, to communicate with wireless terminals, said further one or more transceivers being disabled in said first period of time from communicating, and disabling further remaining one or more transceivers other than said enabled further one or more transceivers, from communicating with wireless terminals (see p.033, lines 7-19; during odd time slots, only odd sub-sectors 210 and 214 are transmitting, even sub-sectors 208, 212 beams are set to 0, i.e. even transceiver are disabled).

Regarding claim 10, Padovani discloses a method for communication in an apparatus for a wireless base station adapted to communicate with a plurality of wireless terminals in a plurality of sectors, said method comprising the steps of:

during a first period of time, enabling one or more of said plurality of transceivers that are associated with respective one or more of said plurality of sectors that are not adjacent to each other, to communicate with wireless terminals, and disabling remaining one or more transceivers other than said enabled one or more transceivers, from communicating with wireless terminals (see p.0033, lines 7-14; during even time slots, only even sub-sectors 208 and 212 are transmitting, odd sub-sectors 210, 214 beams are set to 0, i.e. odd transceivers are disabled); and,

during a second period of time subsequent to said first period of time, enabling further one or more of said plurality of transceivers that are associated with respective further one or more of said plurality of sectors that are not adjacent to each other, to communicate with wireless terminals, said further one or more transceivers being disabled in said first period of time from communicating, and disabling further remaining one or more transceivers other than said enabled further one or more transceivers, from communicating with wireless terminals (see p.033, lines 7-19; during odd time slots, only odd sub-sectors 210 and 214 are transmitting, even sub-sectors 208, 212 beams are set to 0, i.e. even transceiver are disabled).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claim 2, 3, 8, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Gudmundson (US 5,295,153).

Regarding claim 3, Padovani discloses the apparatus according to claim 1, but fails to specifically disclose that before the change to said second period of time, said transceiver which is enabled to communicate broadcasts a packet containing indication of a length of said second period of time to wireless terminals in a corresponding sector. However, this feature is well known in the art and Gudmundson is evidence of the fact. Gudmundson teaches the concept called discontinuous transmissions and receptions between a base station and mobile terminals, wherein a base station transmitter can be turned off and before turning off (i.e. before second time period), the transmitter transmits a message which tells the receiver (i.e. wireless terminal) that the transmission will be discontinued for a certain period of time, and the receiver can use that period of time to measure signals strengths of other transmitters (see col. 4, lines 1-16). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, for the active transceivers to broadcast an indication of a length of the second period of time, as suggested by Gudmundson, in order for the wireless terminals to maintain communications with the base station through other transceivers, i.e. sectors, during the indicated time period.

Regarding claim 2, Padovani discloses the apparatus according to claim 1, wherein, a predetermined length of time before the change to said second period of time, said transceiver which is enabled to communicate starts detection of a transmitted RF signal in a corresponding sector (see p.0033, lines 8-14; during even time slots, the even sub-sectors beams are on which means that the even sub-sectors are transmitting RF signals to terminals in the even sectors). But fails to specifically disclose to broadcast a packet indicative of disabling of transmission during said

second period of time. However, this feature is well known in the art and Gudmundson is evidence of the fact. Gudmundson teaches the concept called discontinuous transmissions and receptions between a base station and mobile terminals, wherein a base station transmitter can be turned off and before turning off (i.e. before second time period), the transmitter transmits a message which tells the receiver (i.e. wireless terminal) that the transmission will be discontinued for a certain period of time (see col. 4, lines 1-16). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, for the enabled transceivers to broadcast an indication of a period of time in where the transmission are going to be disabled, as suggested by Gudmundson, in order for the wireless terminals to change their connections to other transceivers during that period of time and maintain a continuous connection with the base station.

Regarding claim 8, Padovani discloses a wireless terminal adapted to communicate with a wireless base station in any one of a-plurality of sectors, said wireless terminal comprising: a control unit for communicating with said wireless base station during a first period of time (see Fig. 2; p.0033, lines 1-16; as shown in figure 2; subscribers stations communicate with either sub-sectors according to its location, during even and odd time slots).

But, Padovani fails to disclose wherein the wireless terminal receive a packet containing a description representative of a length of a second period of time subsequent to said first period of time, and for disabling transmission during said second period of time. However, this feature is well known in the art and Gudmundson is evidence of the fact. Gudmundson teaches the concept called discontinuous transmissions and receptions between a base station and mobile terminals, wherein a base station transmitter can be turned off and before turning off (i.e. before second time period), the transmitter transmits a message which tells the receiver (i.e. wireless terminal) that the transmission will be discontinued for a certain period of time, then the receiver ends its transmission with the

current transmitter in that period of time, and use that period of time to measure signals strengths of other transmitters (see col. 4, lines 1-16). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, for the wireless terminal to receive a packet containing a description representative of a length of a second period of time subsequent to said first period of time, for disabling transmission during said second period of time, as suggested by Gudmundson, in order for the wireless terminals to maintain communications with the base station through the other transceivers, i.e. sectors, during the indicated time period.

Regarding claim 11, Padovani discloses a method for communication in a wireless terminal adapted to communicate with a wireless base station in any one of a plurality of sectors, said method comprising: communicating with said wireless base station during a first period of time (see Fig. 2; p.0033, lines 1-16; as shown in figure 2; subscribers stations communicate with either sub-sectors according to its location, during even and odd time slots).

But, Padovani fails to disclose wherein the wireless terminal receive a packet containing a description representative of a length of a second period of time subsequent to said first period of time, and for disabling transmission during said second period of time. However, this feature is well known in the art and Gudmundson is evidence of the fact. Gudmundson teaches the concept called discontinuous transmissions and receptions between a base station and mobile terminals, wherein a base station transmitter can be turned off and before turning off (i.e. before second time period), the transmitter transmits a message which tells the receiver (i.e. wireless terminal) that the transmission will be discontinued for a certain period of time, then the receiver ends its transmission with the current transmitter in that period of time, and use that period of time to measure signals strengths of other transmitters (see col. 4, lines 1-16). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, for the wireless terminal to receive a packet

containing a description representative of a length of a second period of time subsequent to said first period of time, for disabling transmission during said second period of time, as suggested by Gudmundson, in order for the wireless terminals to maintain communications with the base station through the other transceivers, i.e. sectors, during the indicated time period.

11. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Yamamoto et al. (US 2003/0109265 A1).

Regarding claim 4, Padovani discloses the apparatus according to claim 1, wherein, during a third period of time before said first period of time, said communication control unit in all of said sectors causes all of said transceivers to communicate with said plurality of wireless terminals, determines locations of said wireless terminals in the sectors (see p.0040; the base stations maintains knowledge of the subscribers stations at any time period).

But, fails to disclose that the location of the wireless terminals is in accordance with identifications codes of said wireless terminals and with identification codes of said transceivers which receive said identification codes, and stores, in a location management table, information indicating which wireless terminals are located in each sector. However, keeping the location of the wireless terminals in a wireless communication network in a database, i.e. location management table, according to a sector ID and the wireless terminal ID, is well known in the art and Yamamoto is evidence of the fact. Yamamoto teaches that in a mobile communications network the ID of the wireless zone (i.e. sector ID) in which the mobile unit is located, is registered for each mobile unit which is an approximate of the position of the mobile units in the wireless communication network (see p.0003; p.0059-0061; Fig. 4). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to maintain a record of the location of the wireless terminals in each of the sectors, according to a sector ID and the ID of the wireless terminals, as

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suggested by Yamamoto, because it is notoriously well known that the base station keeps records of the location of every wireless terminal that is registered with the network.

12. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Pfeiffer et al. (US 4,672,656).

Regarding claim 5, Padovani discloses the apparatus according to claim 1, however fails to specifically disclose transmitting a packet addressed to one of said wireless terminals, whose current location is unknown. However, Pfeiffer teaches that radio stations, i.e. BS, emits search signals in the entire area covered by the system for determining the location of the mobile subscriber terminal that is momentary unknown (see col. 1, lines 37-46). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to transmit a packet addressed to one of said wireless terminal, whose current location is unknown, as suggested by Pfeiffer, because it is important to know the location of the wireless terminals in the coverage area at all times in order for the base station to efficiently communicate with the wireless terminals.

13. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Yamamoto et al., and further in view of Kawai et al. (US 2004/0163024 A1).

Regarding claim 6, the combination of Padovani and Yamamoto disclose the apparatus according to claim 4, but fails to specifically disclose, wherein, during said first period of time, in one of said plurality of sectors, when one of said plurality of transceivers receives an identification code of one of said plurality of wireless terminals which has been located in another sector, from said one terminal, said communication control unit stores said identification code of said one wireless terminal into said location management table in association with said one sector. However, updating the location records of wireless terminals according to their movement in the network is well known in the art and Kawai is evidence of the fact. Kawai teaches that in a mobile communication system,

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it is necessary to maintain a database of mobile users, called a home location register, which is updated as a mobile terminal moves from one area to another, in order for calls to be routed efficiently according to the location of the mobile terminals in the network (see p.0002). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to during said first period of time, the communication control unit stores the wireless terminal ID associated with a new sector, as suggested by Kawai, because it is necessary to maintain a record of the locations of the wireless terminals updated so that calls may be routed to them efficiently.

14. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Padovani et al. in view of Mellor et al. (US 2002/0132644 A1).

Regarding claim 7, Padovani discloses the apparatus according to claim 1, but fails to specifically disclose wherein said transceivers transmit and receive signals in the same frequency band. However, Mellor teaches that a base station usually provide a platform for a number of transceiver that can support a number of simultaneous voice and data calls. The base station is usually divided in sectors, and each sector will have typically one to four transceivers, each transceiver operating in the same frequency band (see p.0049). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, wherein the plurality of transceiver transmit and receive signals in the same frequency band, as suggested by Mellor, because it is notoriously well known the use of a single frequency band within of all the sectors of a wireless base station.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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